

U.S. Patent application 10/053,260

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Response to U.S. Patent office action dated 07/14/2004

AMENDED CLAIMS

What I claim is:

1-12 (canceled)

13. (amended) A threaded hole finishing tool comprised of :

A deburring tool for use in conjunction with a threading tap having spiral or helical flutes~~[[, said]]~~ and that deburring device tool being comprised of a cutter body having cutting members of a spiral or helical nature conforming to the spiral or helical nature of the flutes in said threading tap, said cutting members having guiding following edges (25) and (26) ~~at their contact point with the taps flutes~~ that are separated by an inside surface that allow the cutting body to axially move up and down along the ~~taps flutes~~ tap's flutes and simultaneously rotate with the helical nature of the ~~taps flutes~~ tap's flutes while not engaging the ~~taps cutting edge~~ tap's cutting edges (28) and ~~or non-cutting edge~~ non-cutting edges (27) while being resiliently held to said tap by means of a spring ~~or similar resilient component~~ which urges said cutter body towards the cutting end of said tap.

14. (amended) A deburring tool as described in claim 13, wherein the cutting members of said deburring tool and the spiral flutes of said threading tap have a helix angle greater than ~~the critical angle of~~ 45 degrees and less than 60 degrees and where the cutting edge (30R) of the deburring tool is ground to cut in the same direction as the ~~[[taps]]~~ tap's cutting direction. ~~and as the taps rotational direction is reversed for removal from the~~

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~~hole the deburring tools relieved non-cutting edge rides in contact with the threaded holes top surface~~

15. (amended) A deburring tool as described in claim 13, wherein the cutting members of said deburring tool and the spiral flutes of said threading tap have a helix angle less than ~~the critical angle of~~ 45 degrees and more than 5 degrees and where ~~the non-cutting relieved edge of~~ the deburring tool rides the top surface of the hole as it is being threaded and when the rotational direction of the tap is reversed ~~the cutting edge of the deburring tools~~ deburring tool's cutting members, which are ground to cut in the opposite direction as that of the tap ~~would cut removes~~ remove material from the top of the hole.

16. (amended) A deburring tool as described in claim 13, wherein the cutting members of said deburring tool and the spiral flutes of said threading tap have a helix angle less than ~~the critical angle of~~ 45 degrees and more than 5 degrees and the cutting edge ~~of the~~ deburring tool is ground to cut in the same direction as the ~~[[taps]]~~ tap's cutting direction. ~~and as the taps rotational direction is reversed for removal from the hole the deburring tools relieved non-cutting edge rides in contact with the threaded holes top surface.~~

17. (amended) A deburring tool as described in claim 13, wherein in which said threading tap is a combination drill and tap.

18. (amended) A deburring tool as described in claim 14-16, wherein 14, 15, or 16, in which said threading tap is a combination drill and tap.

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19. (canceled)

20. (canceled)

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Response to office action objections of July 14, 2004

In regard to the rejections of claims 13-20 filed on February 23, 2004 my response is as follows:

1. "contact point" not having antecedent basis :

This term has been removed from claim 13.

2. Scope of "similar resilient component" can not be determined:

This has also been removed from claim 13.

3. "cutting edge" and "non-cutting edge" of the tap in claim 13 , do not have antecedent basis:

These are both described in paragraph 0033 in the application publication US 2003/0138302 A1 and are referenced to in Fig 5. as "cutting edges" 28 and "non-cutting edges" 27.

They remain in claim 13, though I have changed them from singular to plural , they now conform to the written description in the patent application. Reference numbers have also been added to the claim for them.

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4. "critical angle" of claims 14,15 and 16 do not have antecedent basis:

The "critical angle" is described in application in paragraph 0008 and 0043. I agree the scope of the description is vague. I have removed it from the claims.

5. "cutting edge" of the deburring tool in claims 14-16 do not have antecedent basis:

The deburring tool's cutting edge is described in paragraphs 0035, 0036, 0037, and 0038 of the patent application publication.

It has been left in claim 14 and a reference number has been added. It could be remove from the claim if necessary. It has been removed from claims 15 and 16.

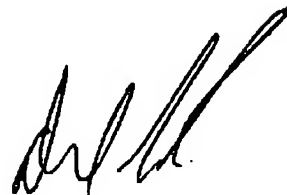
6. The "relieved non-cutting edge" of claims 14 and 16 and the "non-cutting relieved edge" of claim 15 do not have antecedent basis:

These have all been removed from claims 14, 15 and 16.

7. An additional change has been made to claim 13; "guiding" has been removed and replaced with "following". The claim will now conform to the written description of these edges in paragraph 0032 of the application.

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Respectfully Submitted,



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